

Figure 1

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GENE	RT-PCR ES EB	ES (±SE)	NORMALIZED ABUNDANCE IN GERM CELLS	MOUSE ORTHOLOGUES	MOTIFS
Hs.2860	55	154	1228±107	76%	Pouf1/Oct4 homeobox
Hs.67624	519	1096±30	78%	-	nuclear localization and leucine zipper domains
Hs.351262	55	625±187	95%	-	
Hs.86154	31	1319±81	66%	Tex17	'cold-shock' DNA-binding and zinc finger domains
Hs.189095	27	665±51	58%	-	C2H2 zinc finger domains
GPDH					

Figure 2

Summary:

The Affymetrix probeset 231381_at. exhibited an ES/EB ratio of 385. This probeset was derived from the Human UniGene cluster Hs.67624. This cluster is composed of 24 individual EST sequences most of which are derived from ES cell lines and germ cell tumors. It is also represented by the Genbank sequence BF223023. This mRNA appears to be encoded within the intron of another gene, the voltage-gated calcium channel alpha(2)delta-3 subunit gene. This mRNA appears to be transcribed from an endogenous human retrovirus which has been spliced to a non-viral sequence at its 3' end. This 3' sequence is unique in the genome. This mRNA does not appear to encode a complete protein. The 3' exon of the mRNA shares similarity with the Rat low density lipoprotein receptor-related protein 2 however this exon contains stop codons suggesting that it may represent a transcript derived from a pseudogene.

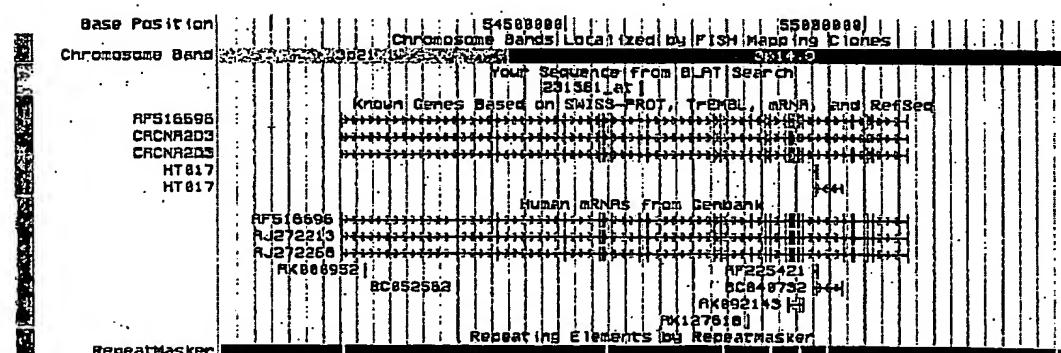
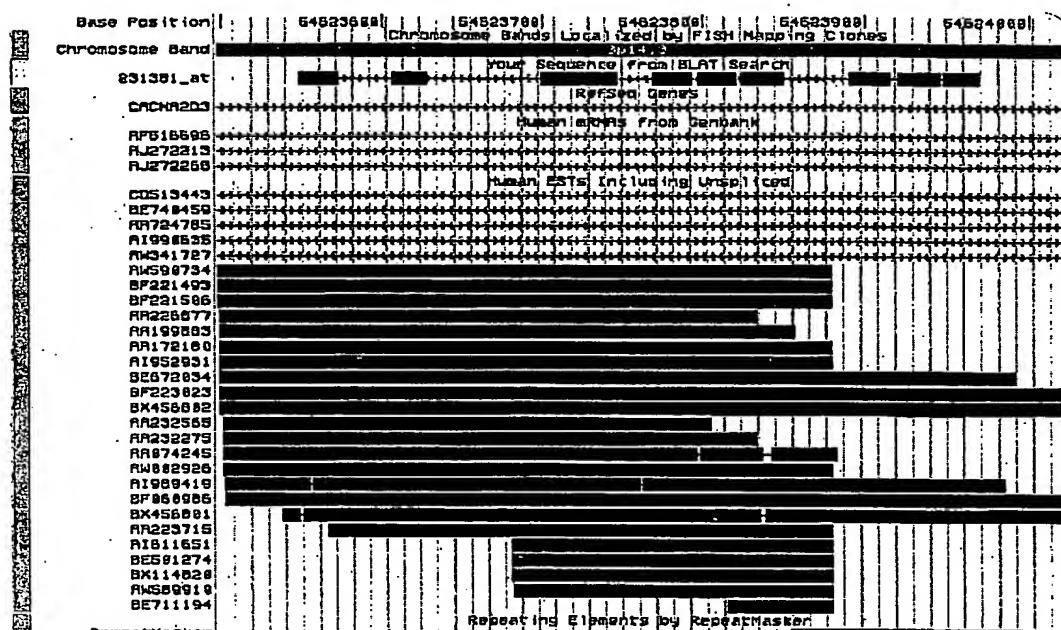
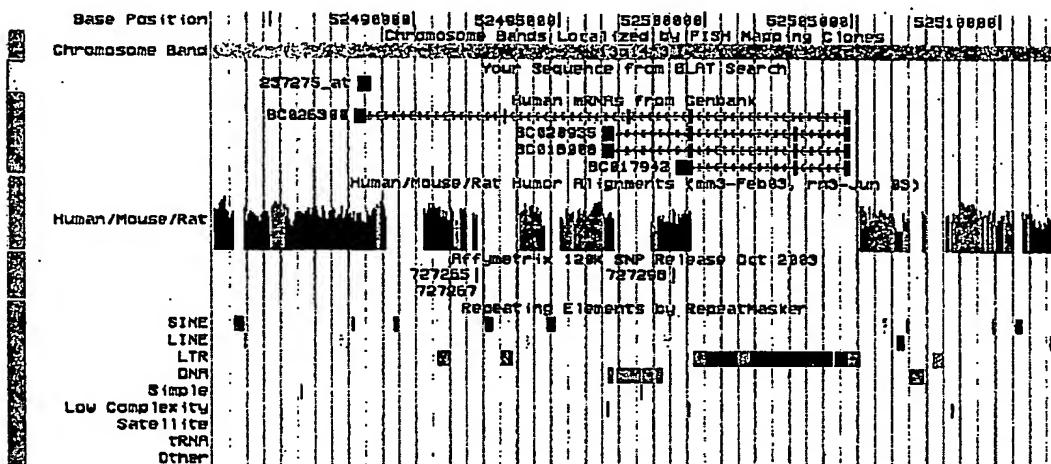


Figure 3

The Affymetrix probeset 237275_at exhibited an ES/EB ratio of 39. This probeset was derived from the Human Unigene cluster Hs.143925 which is also represented by the Genbank clone BC026300. This mRNA is composed of five exons and is encoded by a gene located on Chromosome 13. This gene appears to encode three different related mRNAs represented by BC026300, BC018008 and BC017942 as displayed below, but the 237275_at probeset is specific for the 3' exon of BC026300.



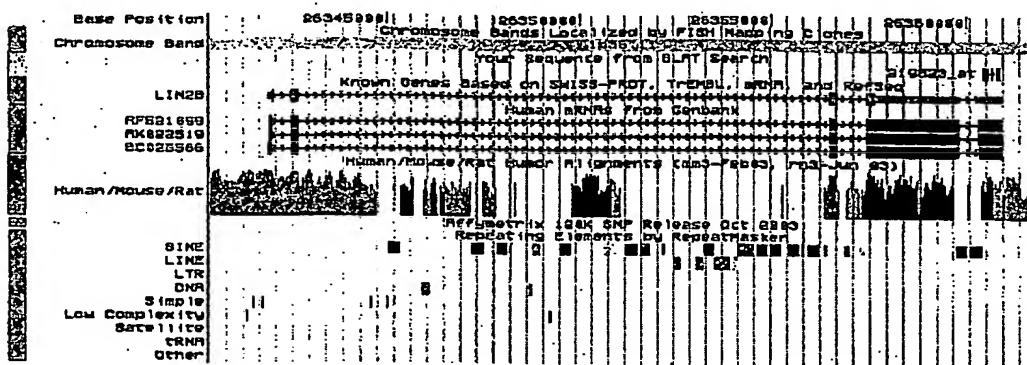
The BC026300 mRNA has three exons that contain repetitive DNA sequences and two exons that contains unique DNA sequences that have been conserved across the mouse, rat and human genomes.

Protein:

The longest open reading within this mRNA is located in the 3' exon containing unique sequences. The amino acid sequence of this open reading frame does not similar to any known protein. Comparison of this peptide to the Pfam database <http://pfam.wustl.edu/> using hmmsearch reveals no similarity to known protein motifs. Analysis of this coding sequence with the methods of Fickett (NAR 10(17); 5303-5318 (1982)) and Gribskov et al. (NAR 12(1); 539-549 (1984)) as implemented in The GCG Wisconsin Package applications Testcode and CodonPreference suggest that this sequence may not actually encode protein.

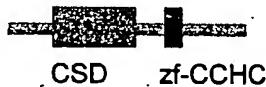
Figure 4

The Affymetrix probeset 219823_at exhibited an ES/EB ratio of 26. This probeset was derived from the Human Unigene cluster Hs.86154 which is also represented by the RefSeq clone NM_024674. This mRNA encodes a 209 amino acid protein (below) that is similar to the *c. elegans* lin-28 RNA-binding protein.



Protein Motifs:

Comparison of the protein derived from this sequence to the Pfam database <http://pfam.wustl.edu/> using hmmpfam reveals the presence of a Cold-shock DNA-binding domain sequence and Zinc knuckle domain sequence as diagramed below. The presence of these sequences suggest that this protein is involved in binding RNA or single stranded DNA.



Hydropathy:

Kyte-Doolittle Hydropathy Plot (window size = 9)

A hydropathy plot of this protein indicates that it is a relatively hydrophilic protein with no transmembrane domains (see below).

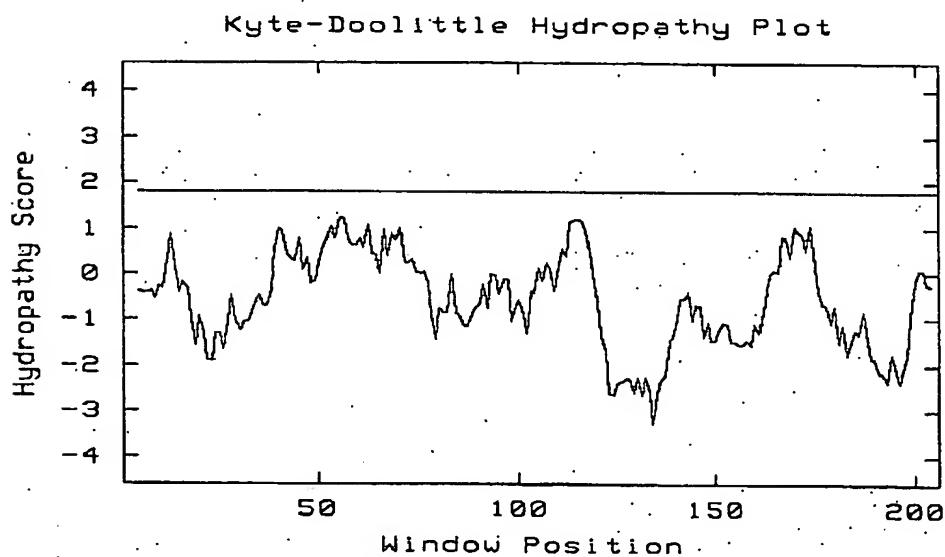
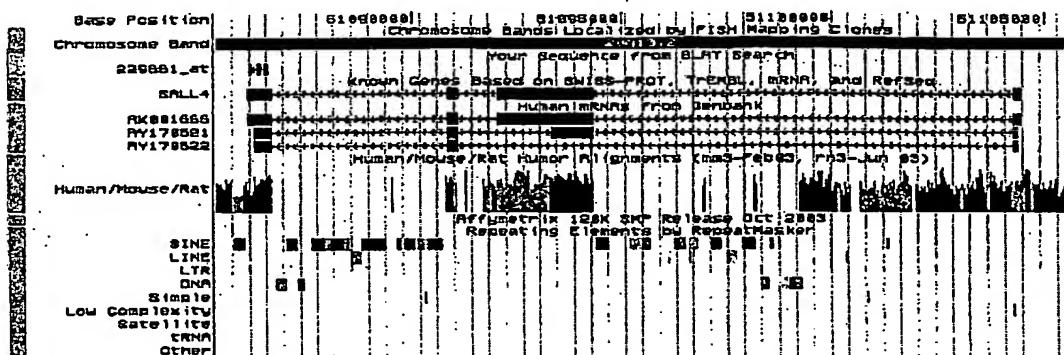


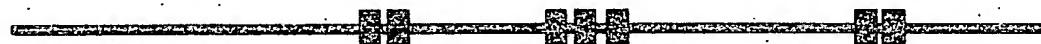
Figure 5

The Affymetrix probeset 229661_at exhibited an ES/EB ratio of 23. This probeset was derived from the Human Unigene cluster Hs.189095 which is also represented by the RefSeq clone NM_020436. This mRNA is encoded by a gene located on Chromosome 20 that has been genetically linked to the congenital ophthalmoplegia 'Duane radial ray syndrome'. This mRNA encodes a 1053 amino acid protein known as Sall4 that is a member of a family of proteins that contain a C2H2 zinc finger domain and are thought to be transcription factors.



Protein Motifs:

Comparison of the protein derived from this sequence to the Pfam database <http://pfam.wustl.edu/> using hmmsearch reveals the presence of seven C2H2 zinc finger domains as diagramed:



Hydropathy:

Kyte-Doolittle Hydropathy Plot (window size = 9)

A hydropathy plot of this protein indicates that it is a relatively hydrophilic protein with no transmembrane domains (see below).

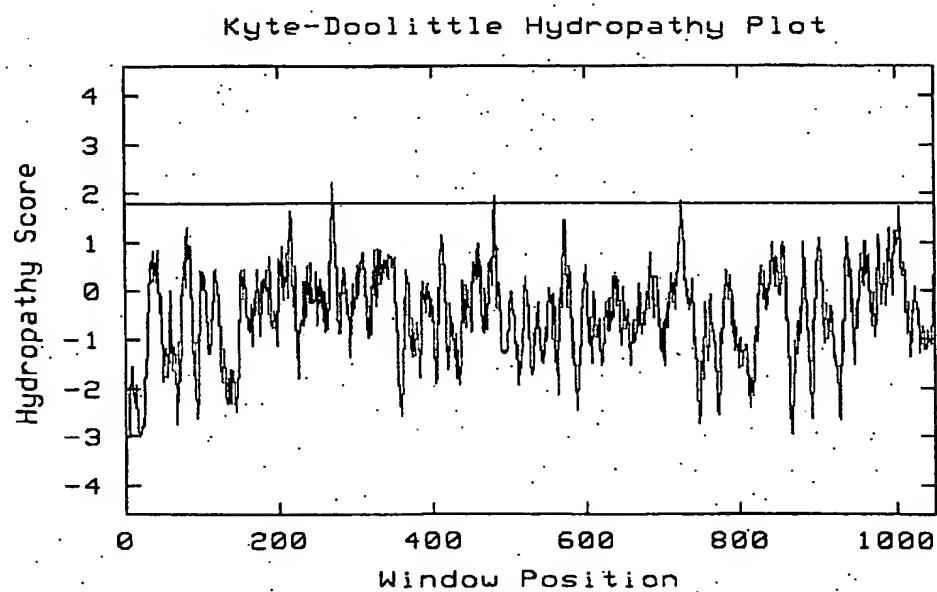
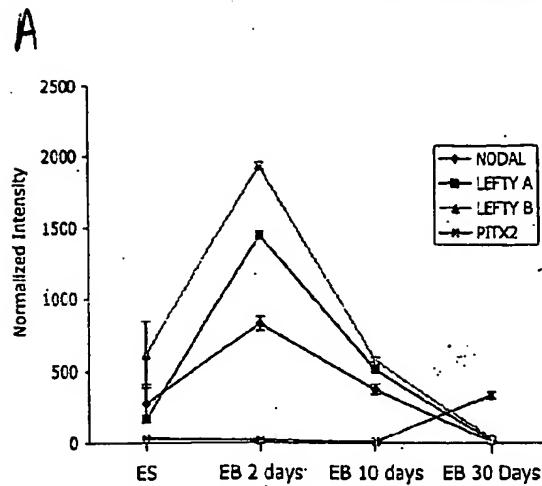


Figure. 6



B

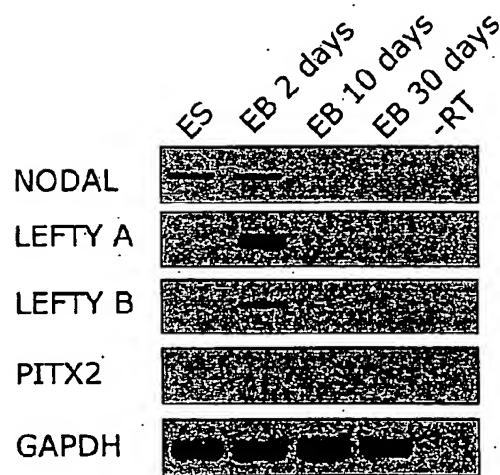


Figure 7

No.	ES/EB	Probe Set Name	Title	Unigene Hs.287389 [Hs.67624] Hs.2860	Genbank M14087.1 AF193855.1 NM_002701.1 AF020589.1 NM_024865.1 AC005378
1	755_216405_at	gene encoding beta-galactoside-binding lectin	??? chr 3 , small prot. No similarity, multiple ESTs		
2	385_231381_at	POU domain, class 5, transcription factor 1			
3	243_208286_X_at	cytochrome C oxidase subunit VIa homolog	Hs.132863		
4	166_224344_at	Zic family member 2 (odd-paired homolog, Drosophila)	Hs.326290		
5	156_223642_at	Homeodomain-containing transcription factor	Hs.106552		
6	123_220184_at	EST KIAA0868; similar to contact associated protein	Hs.1288	NM_001100.2	
7	113_215145_s_at	actin, alpha 1, skeletal muscle	Hs.123114	NM_001898.1	
8	110_203872_at	cystatin SN	Hs.77171	NM_006739.1	
9	98_206224_at	MCM5 minichromosome maintenance deficient 5, cell division cycle 46 (Hs.343745)	Hs.75561	NM_018063.1	
10	97_201755_at	helicase, lymphoid-specific; proliferation-associated SNF2-like protein; (Hs.343745)	Hs.80962	NM_003212.1	
11	92_220085_at	teratocarcinoma-derived growth factor 1	Hs.1907	NM_006183.2	
12	77_206286_s_at	neurotensin			
13	73_206291_at	galanin			
14	56_214240_at	gastrulation brain homeo box 2	Hs.184945	AF118452.1	
15	56_210560_at	PROBABLE EUKARYOTIC TRANSLATION INITIATION FACTOR 3 RNA-BIN	Hs.278635	AI671581	
16	53_231061_at	blast hit: mouse desmin-binding fragment DesD19 (3.00E-86)	Hs.41072	AW262311	
17	52_231628_s_at	blast hit: sheep SOX-2 gene (SRY-like HMG-box transcription factor) (Hs.816)	Hs.816	AI669815	
18	50_228038_at	mitotic checkpoint kinase Bub1		AL137654.1	
19	48_215509_s_at	Glutamate Decarboxylase 1, isoform GAD25		NM_013445.1	
20	47_206669_at	Uteroglobin-related protein 1 (UGRP1) (NP_473364)	Hs.54795	BG540454	
21	46_228782_at	kinesin family member C2-like	Hs.92679	AI636647	
22	44_231407_s_at	SP1-like transcription factor (human homolog of Mouse SP5)	Hs.125276	AI380207	
23	42_235845_at	unknown function; located on ch. 10; two related sequences on ch. 11 !	Hs.290255	AW014743	
25	41_230356_at	adducin 2 (beta)	Hs.247423	NM_017488.1	
24	41_205268_s_at	DNA (cytosine-5')-methyltransferase 3 beta	Hs.251673	NM_006892.1	
27	41_220668_s_at	Nodal	Hs.65853	AI050866	
26	41_230916_at	ESTs, Moderately similar to S30392 phospholipase A2	[Hs.351262] Hs.111227	[AI950472] NM_003413.1	
29	39_237275_at	Zic family member 3 heterotaxy 1 (odd-paired homolog, Drosophila)	Hs.30837	BE779765	
28	39_207197_at	CDC45-like protein	Hs.24969	NM_000810.2	
31	38_204126_s_at	Homolog of Drosophila Orthodenticle 2 homeobox transcription factor	Hs.82906	NM_001255.1	
30	38_242128_at	gamma-aminobutyric acid (GABA) A receptor, alpha 5	Hs.125741	NM_024749.1	
32	36_206456_at	CDC20-cell division cycle 20 homolog (S. cerevisiae)	Hs.336780	BF971587	
33	34_202870_s_at	hypothetical protein FLJ12505			
35	34_219740_at	tubulin, beta polypeptide			
34	34_209372_X_at	centromere protein E (312kD)			
36	33_205046_at				

TABLE I (α)

37	33 204766_s_at	nudix (nucleoside diphosphate linked moiety X)-type motif 1	Hs.388	NM_002452.1
38	32 208580_x_at	H4 histone family, member E	NM_021968.1	
40	32 205478_at	protein phosphatase 1, regulatory (inhibitor) subunit 1A	NM_006741.1	
39	32 204469_at	protein tyrosine phosphatase, receptor-type, Z polypeptide 1	NM_002851.1	
41	31 227434_at	hypothetical protein DKEZP761D2324	A1972623	
43	29 203976_s_at	chromatin assembly factor 1, subunit A (p150)	Hs.79018	NM_005483.1
42	29 212873_at	minor histocompatibility antigen HA-1	Hs.196914	BE349017
44	28 211603_s_at	Ad E1A enhancer-binding protein (ETS-domain transcription factor)	U35622.2	
45	28 219170_at	fibronectin type 3 and SPRY domain-containing protein	Hs.28144	NM_024333.1
46	28 221520_s_at	hypothetical protein FLJ10468	Hs.48855	BC001651.1
47	28 209581_at	similar to rat HREV107	Hs.37189	BC001387.1
48	27 224753_at	no identification; protein product of unknown function	Hs.23044	BE614410
49	27 203129_s_at	kinesin family member 5C	Hs.6641	BF059313
52	26 241530_at	human homolog of Aspergillus sudD (suppressor of bimD6, mitotic block)	Hs.105168	AA814371
50	26 204775_at	chromatin assembly factor 1, subunit B (p60)	Hs.75238	NM_005441.1
53	26 219823_at	hypothetical protein FLJ12457	[Hs.86154]	NM_024674.1
51	26 221805_at	neurofilament, light polypeptide (68kD)	Hs.211584	NM_006158.1
55	25 201430_s_at	dihydropyrimidinase-like 3	Hs.74566	W72516
57	25 210457_x_at	high-mobility group (nonhistone chromosomal) protein isoforms I and Y	Hs.139800	AF176039.1
56	25 219942_at	myosin light chain 2a	Hs.75636	NM_021223.1
58	25 217728_at	\$100 calcium binding protein A6 (calcyclin)	Hs.275243	NM_014624.2
54	25 205547_s_at	transgelin	Hs.75777	NM_003186.2
59	24 230195_at	no identification	Hs.152129	BF672169
62	23 209807_s_at	nuclear factor J/X (CCAAT-binding transcription factor)	Hs.35841	U18759.1
60	23 229661_at	similar to SALL1 (sal (Drosophila)-like	[Hs.189095]	NM_020436.1
61	23 205691_at	synaptotagmin 3	Hs.6467	NM_004209.2
64	22 204560_at	Fk506-binding protein 5	NM_004117.1	
63	22 204696_s_at	cell division cycle 25A	Hs.1634	NM_001789.1
65	22 205347_s_at	thymosin, beta, identified in neuroblastoma cells	Hs.56145	NM_021992.1
67	21 221051_s_at	muscle-specific beta 1 integrin binding protein	Hs.135458	NM_014446.1
66	21 206893_at	sal-like 1 (Drosophila)	Hs.123094	NM_002968.1

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